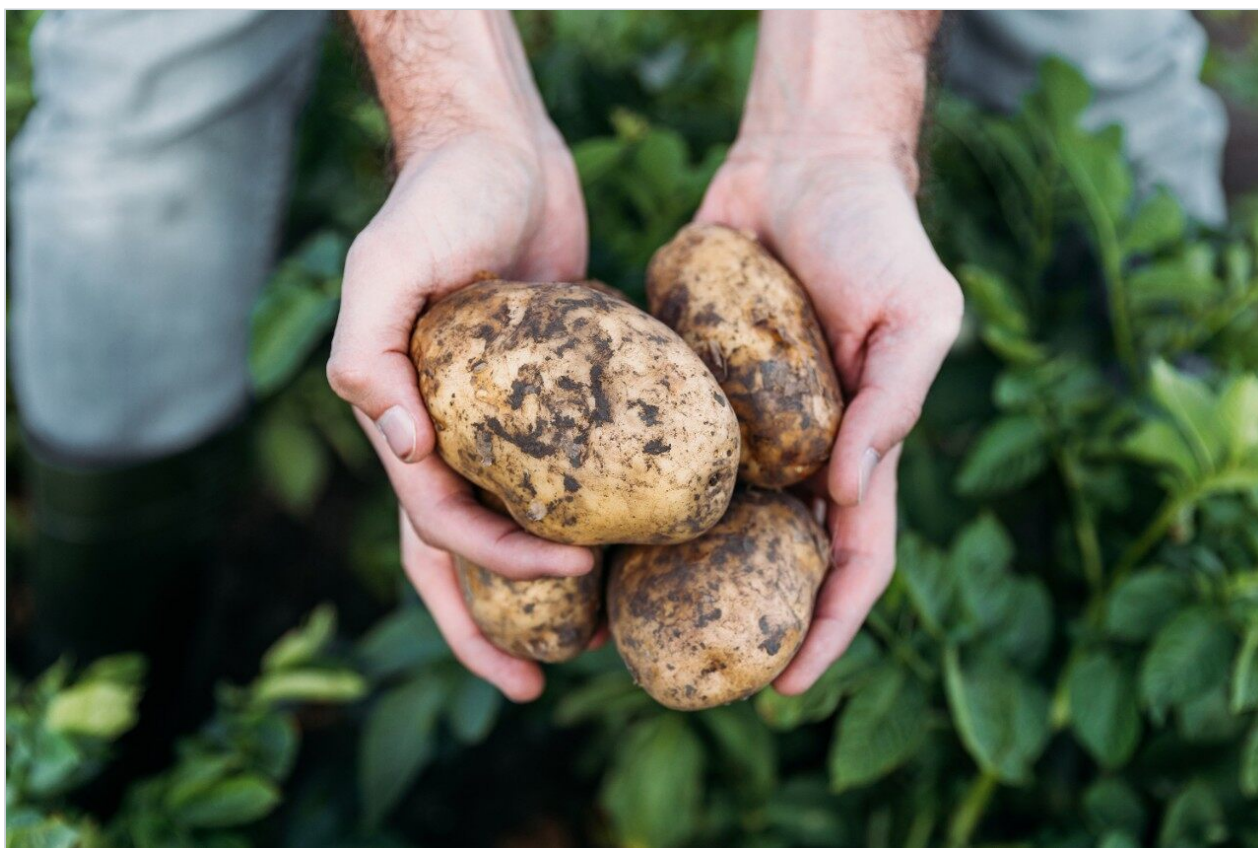




Propham in Potatoes by GC-MS

Waters Corporation



This is an Application Brief and does not contain a detailed Experimental section.

Abstract

This analytical method can be used to monitor Propham residues in potatoes.

Introduction

Propham is the active substance used as herbicides and potato sprout inhibitor. This analytical method can be used to monitor Propham residues in potatoes.

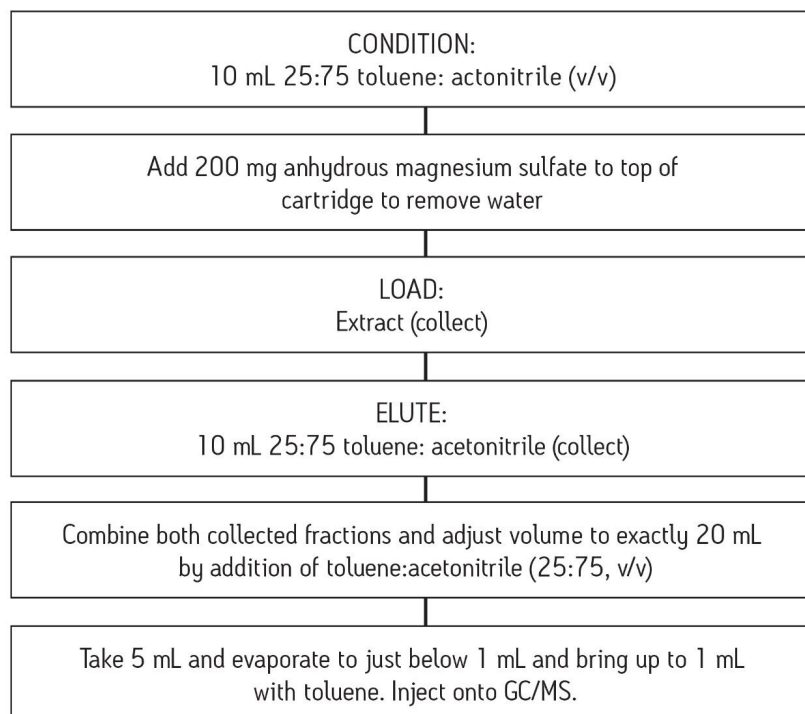
Experimental

Pre-treatment

1. Add 15 g of ground potatoes into a 50 mL centrifuge tube.
2. Add 15 mL 1% acetic acid in acetonitrile and shake.
3. Add 1.5 g anhydrous sodium acetate and 6 g anhydrous magnesium sulfate (equivalent to contents of DisQuE Pouch, AOAC method).
4. Centrifuge >1500 rcf for 1 minute.
5. Take out 7.5 mL extract and dilute to 10 mL with 2.5 mL toluene.

SPE Procedure

Sep-Pak® Vac Carbon Black/Aminopropyl 6 cc/500 mg/500 mg



GC Conditions

GC System:	Agilent 6890
GC Column:	DB-5ms, 30m x 0.25mm (i.d.), 0.25 µm film. Direct connection of column to injection-port liner
Transfer line to MS:	300 °C
Source temp.:	200 °C
Injection volume:	1 µL splitless
Injection port temp.:	180 °C

Initial temp.:	80 °C
Time at initial temp.:	1 minute
	Then Program at 10 °C/ min to 200 °C
	Then at 25 °C minute to 300, hold 5 minutes

GC-MS Conditions

GC-MS System:	Waters Quattro micro GC
Ionization mode:	Electron Impact (70 eV)
	Selected-Ion Recording (SIR)

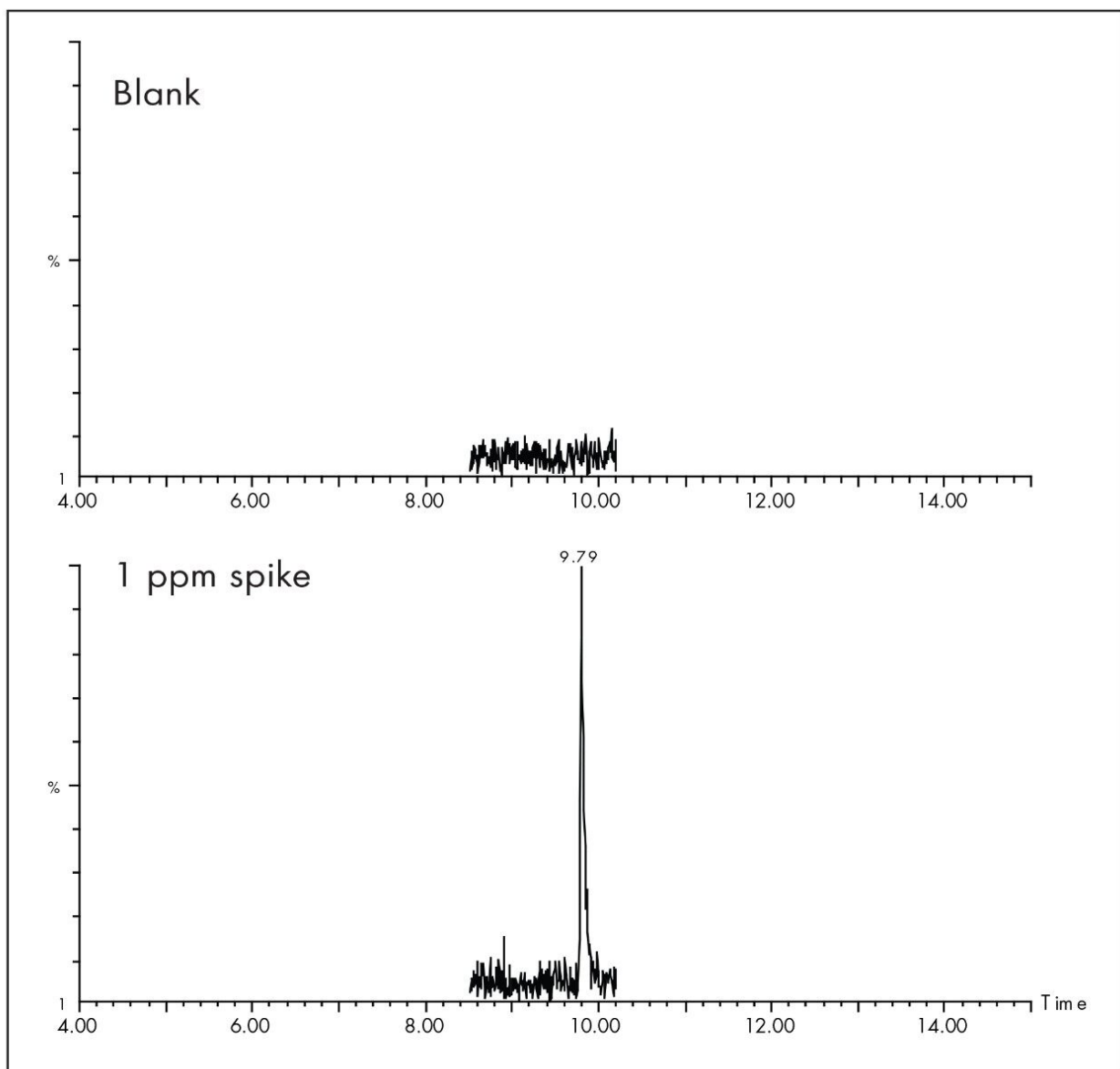
HP6890 GC Flow1

Time (min)	Rate Final (mL/min)	Flow (mL/min)
0.00	50	3
0.50	50	3
0.60	50	1
Initial Flow:	1 mL/min	

GC-MS (SIR)

Channel		Mass
1 (Quantification)		92.8
2 (Confirmation)		119
3 (Confirmation)		120

Results and Discussion



Chromatogram of a 1 $\mu\text{g/g}$ spiked potato sample.

Compound Name: propham 92.8	RT	Area
1 ppm spiked 1	9.78	379.00
1 ppm spiked 2	9.82	382.00
1 ppm spiked 3	9.80	458.00
1 ppm spiked 4	9.79	399.00
1 ppm spiked 5	9.75	421.00
Mean		407.80
RSD (%)		8.01
Recovery (%)		95.73

Recovery results for 1 µg/g spiked potato sample.

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